

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 28281/wi	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/AT2004/000442	International filing date (day/month/year) 15.12.2004	Priority date (day/month/year) 15.12.2003	
International Patent Classification (IPC) or national classification and IPC B01D53/26, B01D53/06, F24F3/14			
Applicant EGGER, Horst			

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of 8 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>
--

<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AT2004/000442

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

 - international search (Rule 12.3 and 23.1(b))
 - publication of the international application (Rule 12.4)
 - international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

the international application as originally filed/furnished

the description:

pages 6-11 as originally filed/furnished 08.07.2005 with letter
 pages* 1-5, 5a received by this Authority on of 05.07.2005

pages* _____ received by this Authority on _____

the claims:

nos. _____ as originally filed/furnished

nos.* _____ as amended (together with any statement) under Article 19 08.07.2005 with letter
 nos.* 1-12 received by this Authority on of 05.07.2005

nos.* _____ received by this Authority on _____

the drawings:

sheets 1/5-5/5 as originally filed/furnished

sheets* _____ received by this Authority on _____

sheets* _____ received by this Authority on _____

a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. The amendments have resulted in the cancellation of:

the description, pages _____

the claims, nos. _____

the drawings, sheets/figs _____

the sequence listing (*specify*): _____

any table(s) related to sequence listing (*specify*): _____
4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

the description, pages _____

the claims, nos. _____

the drawings, sheets/figs _____

the sequence listing (*specify*): _____

any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No. PCT/AT2004/000442
--

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
-----------	---

1. Statement

Novelty (N)	Claims	1-12	YES
	Claims		NO
Inventive step (IS)	Claims	1-12	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-12	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Reference is made to the following documents:

D1: US-A-4 687 573 (MILLER ET AL)
18 August 1987 (1987-08-18)

D2: PATENT ABSTRACTS OF JAPAN, vol. 011, no. 063
(C-406), 26 February 1987 (1987-02-26)
& JP 61 222523 A (P S KANKYO GIKEN KK),
3 October 1986 (1986-10-03)

D3: PATENT ABSTRACTS OF JAPAN, vol. 007, no. 011
(C-145), 18 January 1983 (1983-01-18)
& JP 57 167718 A (NOBUKO TAMAOKI; others: 01),
15 October 1982 (1982-10-15)

D4: US-A-4 711 097 (BESIK ET AL)
8 December 1987 (1987-12-08).

Document D1 is considered to be the prior art closest to the subject matter of claim 1. Said document discloses all the features of the preamble of claim 1 (the references in brackets are to document D1):

D1 discloses a sorption element for a sorption-based air-conditioning unit for the dehumidification (see column 1, lines 17-19) of a space or an airflow, the

/...

Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

sorption element being in the form of a tubular part (62) having a tubular cross section and a first open end and an opposing second open end (see figure 2), the first open end being delimited by a first air-permeable grating element (78; see figure 1 and column 9, line 29) and the second open end being delimited by a second air-permeable grating element (80; see also figure 2 and column 9, line 30), the grating elements being impermeable to a sorbent.

The subject matter of claim 1 therefore differs from the known sorption element in that the sorbent (3) is in the form of a granular bed, the sorbent (3) being distributed to a depth (31) that is less than the length (15) of the sorption element (1) in such a way that the sorbent (3) can be fluidised or vortexed by means of an airflow, in particular from below.

Thus, the subject matter of claim 1 is novel (PCT Article 33(2)).

The problem addressed by the present invention can consequently be regarded as that of improving the transfer of heat and mass.

The solution to the above problem, as proposed in claim 1 of the present application, involves an inventive step (PCT Article 33(3)). The reasons are as follows:

in the light of the disclosure in the characterising part of claim 1, there is a far greater possibility of turbulence on the effective surface of the sorption medium.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/AT2004/000442Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

No such arrangement of the sorption agent, as a granular bed, is known from the available prior art nor can it be derived therefrom without inventive input. D1 proposes the use of a polymeric binding agent to solidify the sorption agent. This is also proposed in documents D2, D3 and D4.

Therefore, in view of the fact that the granular material can be fluidised or vortexed, a loose granular bed as proposed in claim 1 cannot be considered to have been disclosed in the prior art citations or rendered obvious thereby.

Claims 2 to 9 are dependent on claim 1 and, in consequence, likewise satisfy the requirements of the PCT in respect of novelty and inventive step. Claims 10 to 12 relate to a method for a sorption-based air-conditioning unit for the dehumidification and/or heating and/or cooling of a space or of an airflow, using a sorption element (1) as per one of claims 1 to 7 - optionally with a sorption system as per claim 8 or 9 - and, thus, likewise satisfy the requirements of the PCT in respect of novelty and inventive step.